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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,151	03/29/2004	Naoki Wada	018907.0114	8462

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EXAMINER

DUONG, THO V

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/811,151	Applicant(s) WADA ET AL.	
	Examiner Tho v. Duong	Art Unit 3753	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 10 is objected to because of the following informalities: "are are" appears to be a typographical error of "are". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hitoshi et al. (JP 403185279A) in view of Kato et al. (US 5,067,235). Hitoshi discloses (figures 1-2) a heat exchanger comprising a heat exchanger core including plurality of tubes (8,9); an introduction tank (7) attached to end of the heat exchange core for introducing a heat transfer medium into the heat exchanger core; a discharge tank (10) attached to opposite end of the heat exchanger core (8,9) for receiving the heat transfer medium from the heat exchanger core. Hitoshi does not explicitly disclose the material of tanks (7,10). However, Hitoshi discloses that the heat exchanger is divided into two portions, one is high temperature side and the other is low temperature side. The high temperature tube portion (8, stainless steel) attached to the header (7) is made of different material from the low temperature tube portion (9, copper) attached to the header (10), wherein copper (8,9) has a greater specific gravity than stainless

steel (7.8). Kato discloses (figures 6, 12 and column 4, lines 59-64) a heat exchanger that has a plurality of tube extending between two headers and fins (36,95) stacked between the tubes for increasing the heat transfer surface area of the tube, wherein the header is preferably the same material as the tube that joins to the header for a purpose of minimizing the thermal stress due to differential thermal expansion and contraction between materials of the tubes and the header. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Kato's teaching in Hitoshi's heat exchanger for a purpose of minimizing the thermal stress due to differential thermal expansion and contraction between materials of the tubes and the header. Regarding claim 11, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 1647 (1987). Regarding claim 3, the tanks (7,10) are structurally capable of performing both an introductory tank and discharge tank depending on the intended use of the heat exchanger. Therefore, tank (10) can also be referred as "an introductory tank" and tank (7) referred as "a discharged tank", wherein tank (10) made of copper has a higher heat conductivity than tank (7), which is made of stainless steel.

Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hitoshi and Kato as applied to claim 1 above, and further in view of Jones (US 2002/0144808A1). Hitoshi and Kato substantially disclose all of applicant's claimed invention as discussed above except for the limitation that one of the introduction tank or discharge tank is made of polyamide reinforced with glass fiber. Jones discloses (figure 1 and paragraphs 15-17) a heat exchanger that has the end tanks made of resin such as polyamides with reinforcement of glass filler, for a purpose of

Art Unit: 3753

reducing the weight and improving the corrosion resistance of the heat exchanger. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Jone's teaching in the combination device of Hitoshi and Kato for a purpose of reducing the weight and improving the corrosion resistance of the heat exchanger. Regarding claim 7, Hitoshi and Kato do not disclose that the polyamide is an aliphatic polyamide. However, applicant has not disclosed any criticality or to solve any problem for having the selected material. In fact, applicant merely discloses in the specification "that polyamide, in particular, an aliphatic polyamide, may be a prefer resin". Moreover, it appears that the manifold would perform equally well with the manifold made of any type of polyamide resin. Accordingly, the use of a particular aliphatic polyamide is deemed to be a design consideration which fails to patentably distinguish over the prior art of Hitoshi in view of Kato.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hitoshi in view of Kato as applied to claim 5 above, and further in view of Nozaki (US 2002/0119335A1). Hitoshi and Kato substantially disclose all of applicant's claimed invention as discussed above except for the limitation that the polyamide is an aliphatic polyamide. Nozaki discloses (paragraphs 1,5,18 and 20) a polyamide composition for use as a manifold, wherein the polyamide composition comprises of aliphatic polyamide and mixture of inorganic reinforcing, such as fiberglass for a purpose of forming a manifold that requires excellent burst strength. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Nozaki's teaching in the combination device of Hitoshi and Kato for a purpose of forming a manifold the requires excellent burst strength.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Herbert G. Johnson (US 3,489,209) discloses a heat exchanger having plastic and metal components.

Desmond et al. (US 3,415,315) discloses a heat exchanger having a header construction suitable for utilization of dissimilar metals in heat exchanger component.

Beeston et al. (GB 2049149A) discloses a tubular heat exchanger.

Baird (US 2,437,452) discloses an end tank can be made of plastic or metal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v. Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keasel Eric can be reached on 571-272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3753

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Tho v Duong  
Primary Examiner  
Art Unit 3753



TD

August 16, 2006